

Remarks/Arguments

Applicant thanks the Examiner for Office Action mailed January 23, 2007. The status of the application is as follows:

- Claims 10, 11, 21-23, and 30 are objected to as being dependent upon rejected base claims.
- The specification is objected to for lack of section headings.
- Claim 31 is rejected under 35 U.S.C. §101 as being directed towards non-statutory subject matter.
- Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Mori et al. (US 5,311,428).
- Claims 2-5, 19, 20, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Karellas et al. (US 6,895,077).
- Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Crawford et al. (US 4,636,952).
- Claims 7, 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Swerdloff et al. (US 5,724,400).
- Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Swerdloff et al. and in further view of Crawford et al.
- Claims 12, 14, 15, 17, 18, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Eisenberg et al. (US Pub. 2003/0128801 A1).
- Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Eisenberg et al. and in further view of Swerdloff et al.
- Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Karellas et al. and in further view of Eisenberg et al.

The objections and rejections are discussed below.

**The Objection to the Claims**

The Examiner is thanked for indicating that **claims 10, 11, 21-23, and 30** would be allowable if rewritten in independent form, including all of the limitations of the base claims and intervening claims. As discussed below, independent claims 19, 26, and 31 have been amended herein to include allowable subject matter from some of these claims. As a consequence of these amendments, claims 21-23 and 30 have also been amended herein. Claims 10 and 11 have also been recast in independent form, as suggested in the Office Action, respectively as new claims 32 and 33. Applicants reserve the right to recast any or all of the claims 21-23 and 30 as suggested by the Office at a later date if needed.

**The Objection to the Specification.**

The specification is objected to because there are no section headings. This objection should be withdrawn because section headings are optional. MPEP §608.01(a), which is directed towards the arrangement of the specification, includes 37 CFR 1.77 (c), which provides that “[t]he text of the specification sections ... should be preceded by a *section heading* ....” (Emphasis added). The term “should” is permissive language as opposed to mandatory language such as “shall,” “must,” or the like. Applicant does not wish to include the suggested section headings. Accordingly, this objection should be withdrawn.

**The Rejection of Claim 31 under 35 U.S.C. 101.**

Claim 31 is rejected under 35 U.S.C. §101 as being directed towards non-statutory subject matter. Claim 31 has been amended herein as suggested by the Office and, thus, this rejection should be withdrawn.

**The Rejection of Claim 1 under 35 U.S.C. 102(b) as being anticipated by Mori et al. (US 5,311,428).**

Claim 1, which is directed towards a computed tomography imaging system, has been amended herein with limitations from claim 18 and now recites that the system includes, *inter alia*, ***a first asymmetrically adjustable collimator that is asymmetrically adjustable in a direction generally perpendicular to the longitudinal axis to position a first outer projection of the first radiation relative to a second outer projection of the first radiation, and a second asymmetrically adjustable collimator that is asymmetrically adjustable in a direction generally perpendicular to the longitudinal axis to position a first outer projection of the second radiation relative to a second outer projection of the second radiation.***

In the rejection of claim 18, the Office concedes that Mori et al. does not teach these aspects. To make up for this conceded deficiency, the Office asserts that Eisenberg et al. (US Pub. 2003/0128801 A1) teaches such asymmetrically adjustable collimators and that it would have been obvious to modify Mori et al. in view of Eisenberg et al. to teach these claimed aspects. The Office cites to paragraph [0012] and figure 9f of Eisenberg et al. to support this assertion. However, these sections of Eisenberg et al. do not teach asymmetrically adjustable collimators as recited in claim 1.

In particular, paragraph [0012] of Eisenberg et al. provides a brief description of Figure 5, which shows a cone beam shaped compensation filter 82 and a source collimator 84. The description of Figure 5 provides that the source collimator 84 collimates an x-ray beam so that the x-ray beam projects onto a two-dimensional curved detector array 26. This description also provides that the width of the beam along the x-axis, which is perpendicular to the longitudinal (or z) axis, is set based upon clinical protocol. Figure 5a and Figure 5c, which are sub-figures of Figure 5, both show collimation of the x-ray beam by the source collimator 84 along the x-axis. Figure 9f illustrates weight matrices with weighting coefficients that are used to alter a two-

dimensional x-ray optical response. Neither Figure 5 nor Figure 9f of Eisenberg et al. teach or suggest that the source collimator 84 is asymmetrically adjustable along the x-axis.

In view of the above, withdrawal of this rejection and allowance of claim 1 are respectfully requested.

**The Rejection of Claims 2-5, 19, 20, and 24-27 under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Karellas et al. (US 6,895,077).**

Claims 2-5 depend from claim 1 and are allowable by virtue of their dependencies for at least the reasons provided above in connection with claim 1.

**Independent claim 19** has been amended herein with the limitations of originally filed claims 20 and 22. The Office has indicated that such is patentably distinguishable over the art of record. Therefore, allowance of claim 19 and **claims 20, 24, and 25**, which depend therefrom, is requested. As a result of the amendment to claim 19, claims 24 and 25 have been amended herein. Claim 20 has also been amended herein to include aspects absent in the art of record.

**Independent claim 26** has been amended herein with the limitations of originally filed claim 30. The Office has indicated that such combination is patentably distinguishable over the art of record. Therefore, allowance of claim 26 and the **claim 27**, which depends therefrom, is requested.

**The Rejection of Claim 6 under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Crawford et al. (US 4,636,952).**

**Claim 6** depends from claim 1 and is allowable by virtue of this dependency.

**The Rejection of Claims 7, 9, and 16 under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Swerdloff et al. (US 5,724,400).**

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Swerdloff et al. This rejection should be withdrawn because the Office has not established a *prima facie* case of obviousness.

Claim 7 recites that the second radiation source is *angularly spaced* around the gantry from the first radiation source *by 90°*. The Office concedes that Mori et al. does not teach such claimed aspects and asserts that Swerdloff et al. teaches such aspects and that it would have been obvious to modify Mori et al. with the teachings of Swerdloff et al. However, there is no suggestion or motivation to make the proposed modification. (See MPEP §2143).

Mori et al. is directed to a three (3) tube/detector pair system, while Crawford et al. is directed towards a two (2) tube/detector pair system. If Mori et al. were modified so that all of its tubes were angularly spaced 90° apart as taught in Crawford et al., then two of the three x-ray tube/detector pairs would interfere with each other since they would be 180° apart and overlapping each other. Therefore, such modification to Mori et al. would render Mori et al. unsatisfactory for its intended purpose and, hence, there is no suggestion or motivation to make the proposed modification. (See MPEP §2143.01 V).

In addition, Mori et al. teaches reducing scan time by 1/3 by arranging each of the three x-ray tube/detector pairs about 120° apart so that after rotating the three pairs over 120° the amount of data sampled is equivalent to that sampled by a single x-ray tube/detector rotated over 360°. (See Figures 1, 3, 4A, and 4B, and column 1, lines 15-35). If the x-ray tube/detector pairs of Mori et al. were modified to be angularly spaced 90° apart, then this objective of Mori et al. would not be met. Thus, this modification would also render Mori et al. unsatisfactory for its intended purpose.

Moreover, neither reference teaches or suggests angularly spacing some pairs of x-ray tube/detector pairs 90° apart while concurrently spacing other pairs of x-ray tube/detector pairs apart by some other angular distance. Hence, Mori et al. in view of

Crawford et al. does not teach or suggest spacing only two of three x-ray tube/detector pairs by 90°.

Claims 9 and 16 depend from claim 1 and are allowable by virtue of their respective dependencies.

**The Rejection of Claim 8 under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Sverdloff et al. and in further view of Crawford et al.**

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Sverdloff et al. and in further view of Crawford et al. Claim 8 recites that the second radiation source is *angularly spaced* from the first radiation source *by at least 90°*. The Office asserts that of the three references, Sverdloff et al. teaches such claimed aspects. As discussed above in connection with claim 7, the Office has failed to establish a *prima facie* case for modifying Mori et al. with Sverdloff et al. to teach such aspect. Therefore, this rejection should be withdrawn.

**The Rejection of Claims 12, 14, 15, 17, 18, and 31 under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Eisenberg et al. (US Pub. 2003/0128801 A1).**

Claims 12, 14, 15, 17, and 18 are allowable for depending from allowable base claims. In addition, claim 18 has been amended herein with aspects not found in the art of record.

Independent claim 31 has been amended herein to include subject matter from allowable claim 23. Accordingly, this rejection should be withdrawn.

**The Rejection of Claim 13 under 35 U.S.C. 103(a) as being unpatentable over Mori et al. in view of Eisenberg et al. and in further view of Sverdloff et al.**

Claim 13 indirectly depends from claim 1 and, by virtue of this dependency, is allowable for at least the reasons discussed above in connection with claim 1.

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**The Rejection of Claim 8 under 35 U.S.C. 103(a) as being unpatentable over  
Mori et al. in view of Karellas et al. and in further view of Eisenberg et al.**

Claims 28 and 29 indirectly depend from claim 26 and are allowable by virtue of their dependencies.

**Conclusion**

In view of the foregoing, it is submitted that the pending claims distinguish patentably and non-obviously over the prior art of record. An early indication of allowability is earnestly solicited.

Respectfully submitted,

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